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Fish Diet and Invertebrate Drift Data in the Elwha River Watershed Before and During Dam Removal



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Cover image: Cutthroat trout (*Oncorhynchus clarkii*) and stomach contents—oligochaete worms and the larval and pupal stages of various aquatic insects—sampled on Indian Creek in the Elwha River watershed, Washington, August 2012. Photograph by S. Morley, NMFS/NWFSC.

Recommended citation:

(Morley et al. 2020)¹

¹ Morley, S. A., J. J. Duda, R. C. Johnson, M. L. McHenry, M. Eloffson, E. M. Sampson, and G. R. Pess. 2020. Fish Diet and Invertebrate Drift Data in the Elwha River Watershed Before and During Dam Removal. U.S. Department of Commerce, NOAA Data Report NMFS-NWFSC-DR-2020-02.

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Fish Diet and Invertebrate Drift Data in the Elwha River Watershed Before and During Dam Removal

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Description

This data report summarizes invertebrate drift and fish diet samples collected in the Elwha River watershed before and during dam removal (from 2010 to 2014). Data analyses and results from these data are described in Morley et al. 2020.

Summary

This report summarizes invertebrate drift and juvenile salmonid (*Oncorhynchus* spp.) diet collected before and during Elwha River dam removal in Washington State, U.S.A. Data were collected over three river sections: two sediment-impacted sections and mainstem tributaries. Impacted sections included the lower Elwha River, extending from the estuary to the former Elwha Dam (7 km, elevations 3–25 m) and the middle Elwha River from upstream of the Lake Aldwell inlet to the former Glines Canyon Dam (12 km, elevations 62–110 m). Four tributaries that flowed into the middle Elwha (Little River, Indian River, Madison Creek, and Griff Creek; elevations 68–112 m) served as a reference section, as they were free from sediment impacts associated with dam removal. Twenty-five unique sites were sampled across the three sections. River sites included two habitat types: mainstem and floodplain side channels. Drift and fish diet were collected before dam removal in 2010–11 and during dam removal from 2012–14. Sampling occurred twice annually: in spring (May–June) and summer (July–August). In the river, high flows precluded sampling mainstem sites in spring. Drift samples were collected with 250- μm -mesh 0.14- m^2 -frame drift nets deployed over 30–60-minute timed intervals at each sample site. Fish sampling focused on resident trout (*O. mykiss*, except for *O. clarkii* at Indian Creek) from 40–200 mm fork length, and was conducted by backpack electrofishing. Stomach contents were extracted via nonlethal gastric lavage. Invertebrate drift and fish diet samples were preserved in ethanol and identified in the laboratory to the lowest practical taxonomic level. Body parameter measurements were recorded for all invertebrate taxa to the nearest mm and used to calculate energy content (Morley et al. 2020). Drift invertebrate density was calculated based on the total water volume (m^3) sampled during drift collection, and is presented both numerically and energetically. Contents of fish diet samples are expressed in terms of energy content.

The tables of data can be downloaded from this report's [NOAA Institutional Repository](#) record by clicking on the “Supporting Files” tab.¹

¹ <https://repository.library.noaa.gov/>

References

Morley, S. A., M. M. Foley, J. J. Duda, M. M. Beirne, R. L. Paradis, R. C. Johnson, M. L. McHenry, M. Elofson, E. M. Sampson, R. E. McCoy, J. Stapleton, and G. R. Pess. 2020. Shifting food web structure during dam removal—disturbance and resilience during a major restoration action. PLOS One, in press.



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